



# Elementary Neutralization

*Ecology Fact Sheet*

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**T**his document may be used by generators interested in treating their own waste by elementary neutralization, on-site, in accumulation tanks or containers. Generators of hazardous waste who comply with these standards, and the standards in Technical Information Memorandum (TIM) #96-412, *Treatment by Generator*, will meet the requirements of the *Dangerous Waste Regulations*, Chapter 173-303 WAC.

This Fact Sheet provides guidance only for treatment by generator. If treatment is done according to this guidance document, a permit or other written approval is not necessary.

## Description and Definitions

The elementary neutralization method reduces a material's corrosivity (acidic or caustic properties). The goal of elementary neutralization is to raise or lower the material's pH<sup>1</sup> to a more neutral pH range between 6 and 9.

"Elementary neutralization" means the process of neutralizing wastes that are dangerous wastes only because they exhibit the characteristic of corrosivity as defined herein and in WAC 173-303-090, or are listed in either WAC 173-303-081 or WAC 173-303-082 only for this reason.

"Corrosive Dangerous Waste" has the properties defined in WAC 173-303-090(6), summarized as follows:

- ◆ An aqueous waste with a pH less than or equal to 2, or greater than or equal to 12.5.
- ◆ A liquid that corrodes steel at rates and under conditions specified in WAC 173-303-090(6)(ii).
- ◆ A solid waste that when mixed with an equal weight of water results in a solution, the liquid portion of which has either a pH less than or equal to 2, or greater than or equal to 12.5.

"Treatment Residuals" means waste derived from generator treatment of hazardous waste, as defined in Chapter 173-303 WAC.

<sup>1</sup> pH is a measure of a material's acidity or alkalinity.

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## Applicability

These specific requirements apply to generators of corrosive dangerous waste (defined herein and in WAC 173-303-090(6)) who conduct elementary neutralization in accumulation tanks or containers, and dispose of the treatment residuals (defined herein) in accordance with all applicable state, federal, and local ordinances and regulations.

If the department determines that the treatment process poses a threat to public health or the environment, the generator may be required to obtain a treatment permit. If the treatment is part of a wastewater treatment operation [regulated by Permit by Rule (PBR)], or the waste is being treated to meet Land Disposal Restriction (LDR) standards, please see “Other Regulatory Requirements,” below.

This document is intended solely as guidance. It addresses only the requirements of the *Dangerous Waste Regulations*. The generator is still ultimately responsible for complying with all applicable federal, state and local requirements relating to on-site waste management. Based on the analysis of specific site circumstances, Ecology officials may require a generator to manage their waste in a manner other than as specified in this guidance. Ecology may also revise this Focus Sheet at any time.

## Criteria

The following criteria apply in addition to the guidance in TIM #96-412:

- (1) Elementary neutralization must be conducted in accumulation tanks or containers by appropriately trained personnel.
- (2) The treatment residuals must exhibit either: a) a pH of greater than 2 and less than 12.5 prior to on-site management or disposal, or b) its pH must meet the requirements of a delegated municipality or local solid waste authority.
- (3) Elementary neutralization must not pose a risk to human health and the environment.
- (4) The resulting treatment residuals must be managed and disposed of in accordance with state and local regulations.

## Other Regulatory Requirements

More detailed information on this guidance, or other mechanisms for treatment by generator if this guidance does not apply, is found in Technical Information Memorandum (TIM) #96-412, *Treatment by Generator*. Generators must assure compliance with all applicable sections of the *Dangerous Waste Regulations*, Chapter 173-303 WAC, such as proper designation of waste(s); accumulation, handling and labeling standards; reporting standards; spills and

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discharge requirements; etc. Information on appropriate permit by rule and LDR requirements may be found in the TIM. In addition, the generator must comply with all other applicable federal, state, and local regulations.

## Case Example

A generator wishes to neutralize a container of hydrochloric acid containing etching solution. Sodium hydroxide is slowly and carefully added until the waste is neutral (by testing with litmus paper). The precipitated solids are designated and managed properly. The water is then used for a rinsing operation.

## Ecology Assistance

For more information please contact a hazardous waste specialist at one of the following Ecology offices:

Northwest Regional Office	425-649-7000
Southwest Regional Office	360-407-6300
Central Regional Office	509-575-2490
Eastern Regional Office	509-329-3400
Industrial Section	360-407-6916
Nuclear Waste	360-407-7100

**Ecology is an equal opportunity agency. If you have special accommodation needs, or require this document in alternate format, please call the Hazardous Waste and Toxics Reduction Program at (360) 407-6700 (Voice) or 711 or (800) 833-6388 (TTY).**

